FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

October 6 to 12, 2013 (Week 41)

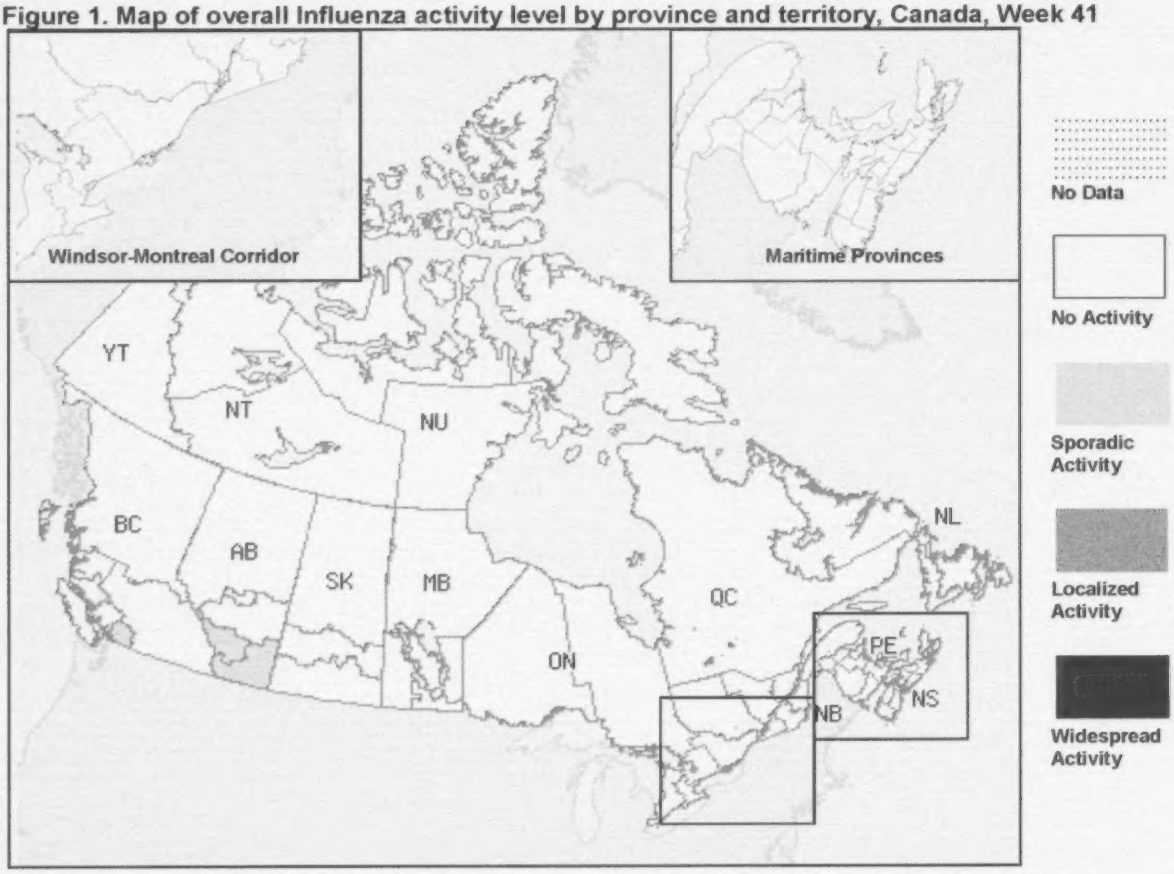
Overall Summary

- Influenza activity in Canada remained at inter-seasonal levels in week 41.
- Few laboratory detections of influenza have been reported to date this season; rhinovirus and parainfluenza were the predominant respiratory viruses in circulation in week 41.
- The ILI consultation rate has followed a gradual upward trend over the past four weeks.

Influenza Activity (geographic spread) and Outbreaks

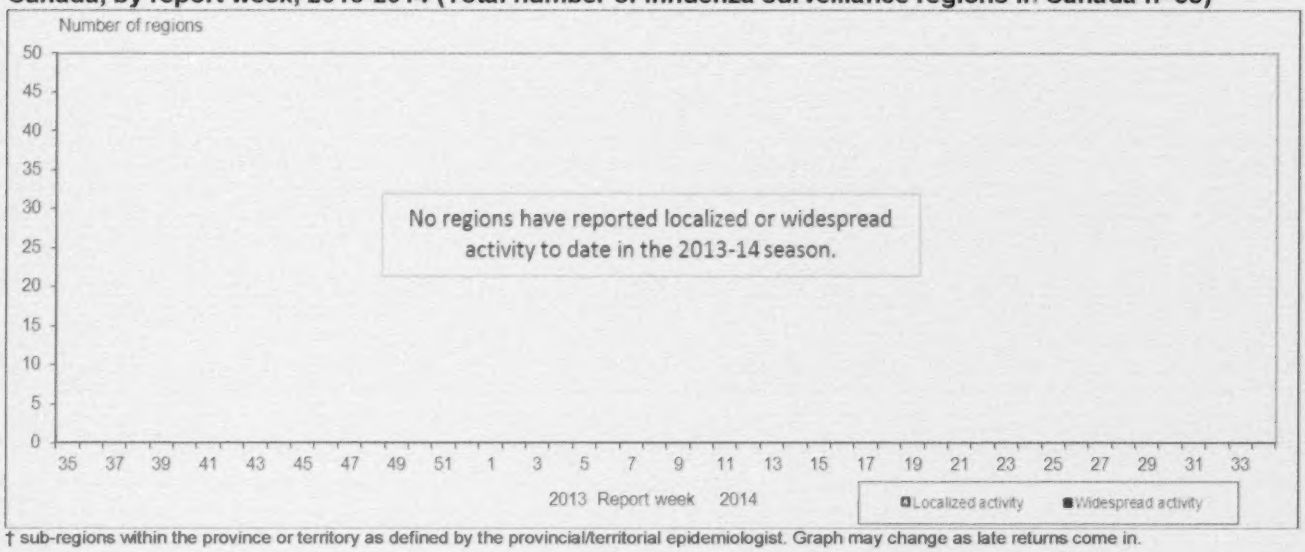
In week 41, four regions (in BC, AB(2) and ON) reported sporadic activity (Figure 1). Localized activity has not been reported since week 26 of the 2012-13 season (Figure 2). No new influenza outbreaks were reported in week 41. (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 41



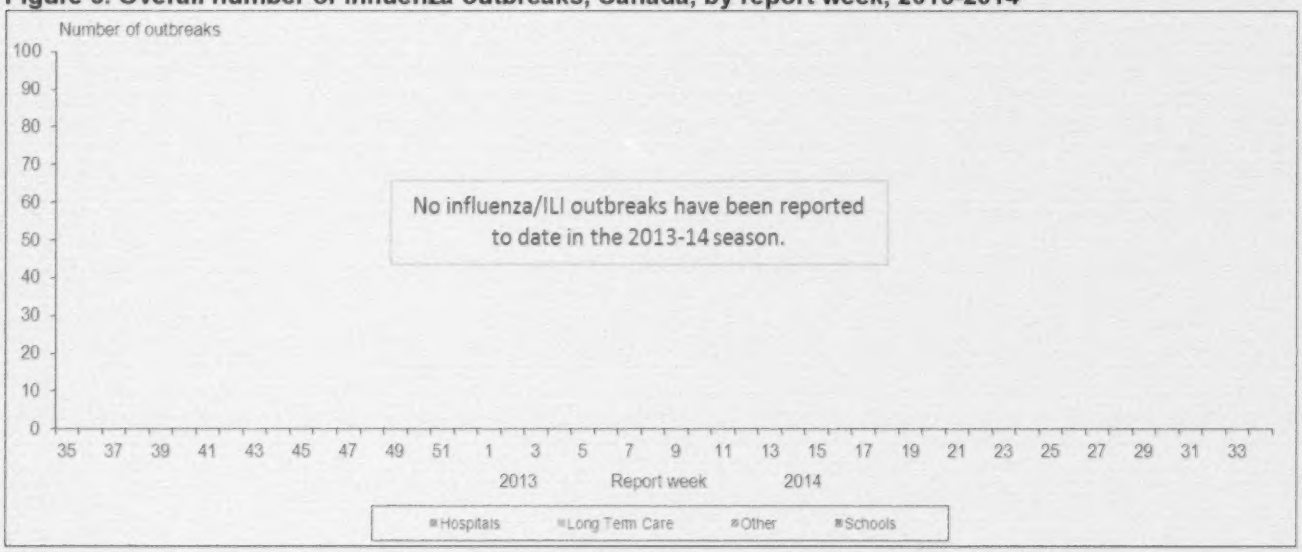
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2013-2014 (Total number of influenza surveillance regions in Canada n=58)


Number of regions
No regions have reported localized or widespread activity to date in the 2013-14 season.
2013 Report week 2014
Localized activity
Widespread activity

† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2013-2014



Influenza and Other Respiratory Virus Detections

The overall percentage of positive influenza tests was low and stable, at 0.4% in week 41. Among the seven influenza viruses detected in week 41, five were influenza A (Table 1). Cumulative influenza virus detections by type/subtype to date are as follows: 75.8% influenza A [16% A(H3), 40% A(H1N1)pdm09 and 44% A(unsubtyped)] and 24.2% influenza B (Table 1).

Detailed information on age and type/subtype has been received for 27 cases to date this season (Table 2). The proportion of cases by age group is as follows: 18.5% <5 years; 0% between 5-19 years; 18.5% between 20-44 years; 48.1% between 45-64 years; and 14.8% ≥65 years of age.

The percentage of positive tests for rhinovirus decreased slightly from 33.6% in week 40 to 31.9% in week 41. The percentage of positive tests for parainfluenza was stable at 4.1% in week 41. The percentages of positive tests for other respiratory viruses were low in week 41: human metapneumovirus (hMPV) (0.3%), respiratory syncytial virus (RSV) (0.8%), coronavirus (0.3%) and adenovirus (1.7%) (Figure 5)*.

* For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly and Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2013-2014

Reporting provinces	Weekly (October 6 to October 12, 2013)						Cumulative (August 25, 2013 to October 12, 2013)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	0	0	0	0	0	1	0	0	0	0	0	3
AB	2	0	1	0	1	0	8	0	1	6	1	2
SK	0	0	0	0	0	0	2	0	0	0	2	0
MB	0	0	0	0	0	0	0	0	0	0	0	0
ON	3	0	1	1	1	1	8	0	3	3	2	3
QC	0	0	0	0	0	0	6	0	0	0	6	0
NB	0	0	0	0	0	0	1	0	0	1	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	0	0	0	0	0	0
Canada	5	0	2	1	2	2	25	0	4	10	11	8

*Unsubtyped: The specimen was typed as influenza A, but no result for subtyping was available. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2013-2014*

Age groups	Weekly (October 6 to October 12, 2013)					Cumulative (August 25, 2013 to October 12, 2013)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	1	0	0	1	0	5	0	2	3	0
5-19	0	0	0	0	0	0	0	0	0	0
20-44	1	0	1	0	0	4	1	1	2	1
45-64	1	1	0	0	0	10	8	0	2	3
65+	0	0	0	0	1	2	0	1	1	2
Unknown	0	0	0	0	0	0	0	0	0	0
Total	3	1	1	1	1	21	9	4	8	6

*Please note that this table reflects the number of specimens for which demographic information was reported. These represent a subset of all positive influenza cases reported. Delays in the reporting of data may cause data to change retrospectively.

Figure 4. Influenza tests reported and percentage of tests positive by report week, Canada, 2013-14

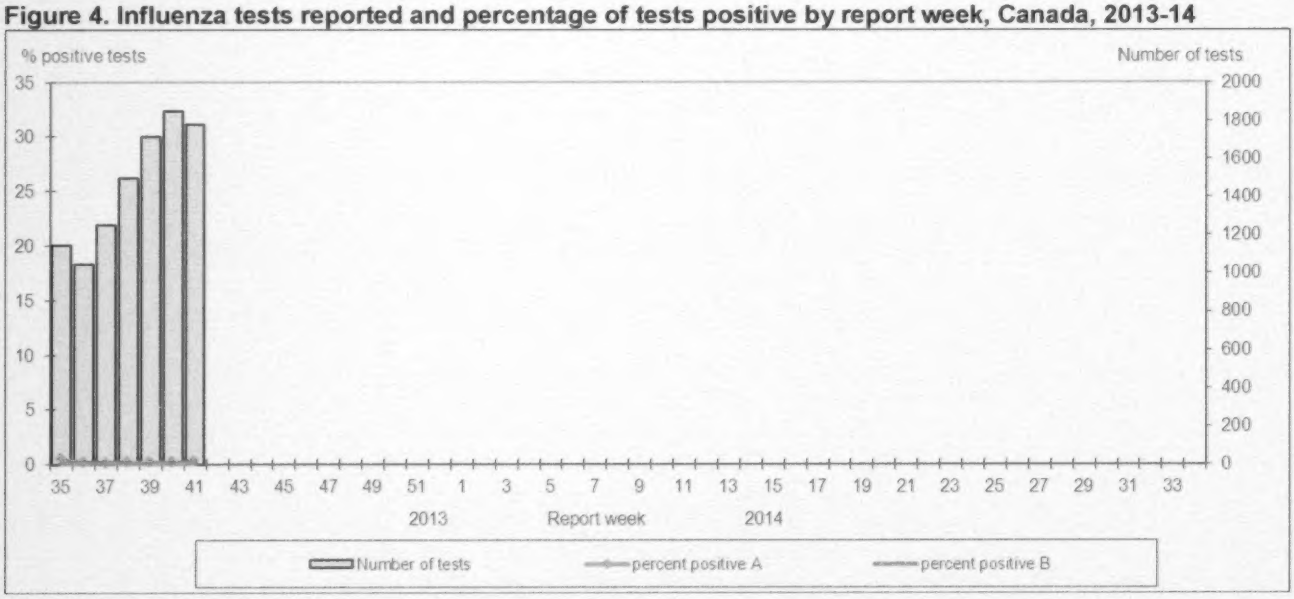
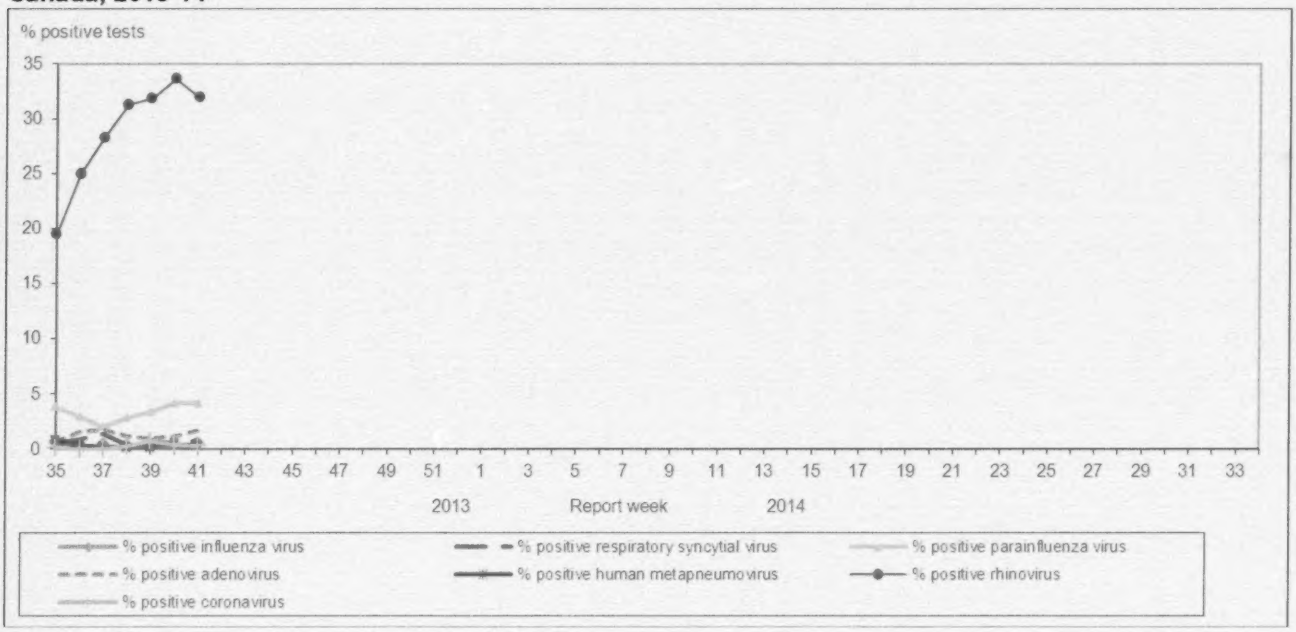


Figure 5. Percent positive influenza tests compared to other respiratory viruses, by reporting week Canada, 2013-14



Influenza Strain Characterizations

The National Microbiology Laboratory (NML) has not yet conducted antigenic characterization of influenza viruses in the 2013-14 season.

Figure 6. Influenza strain characterizations, Canada, 2013-2014, N = 0

No data is available to date on the antigenic characterization of influenza viruses for the 2013-14 influenza season.

Note: The WHO-recommended components for the 2013-2014 northern hemisphere trivalent influenza vaccine include: an A/California/7/2009 (H1N1)pdm09-like virus, an A(H3N2) virus antigenically like the cell-propagated prototype virus A/Victoria/361/2011b, and a B/Massachusetts/2/2012-like virus.

Antiviral Resistance

The NML has not yet conducted antiviral resistance testing of influenza viruses in the 2013-14 season.

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2013-2014

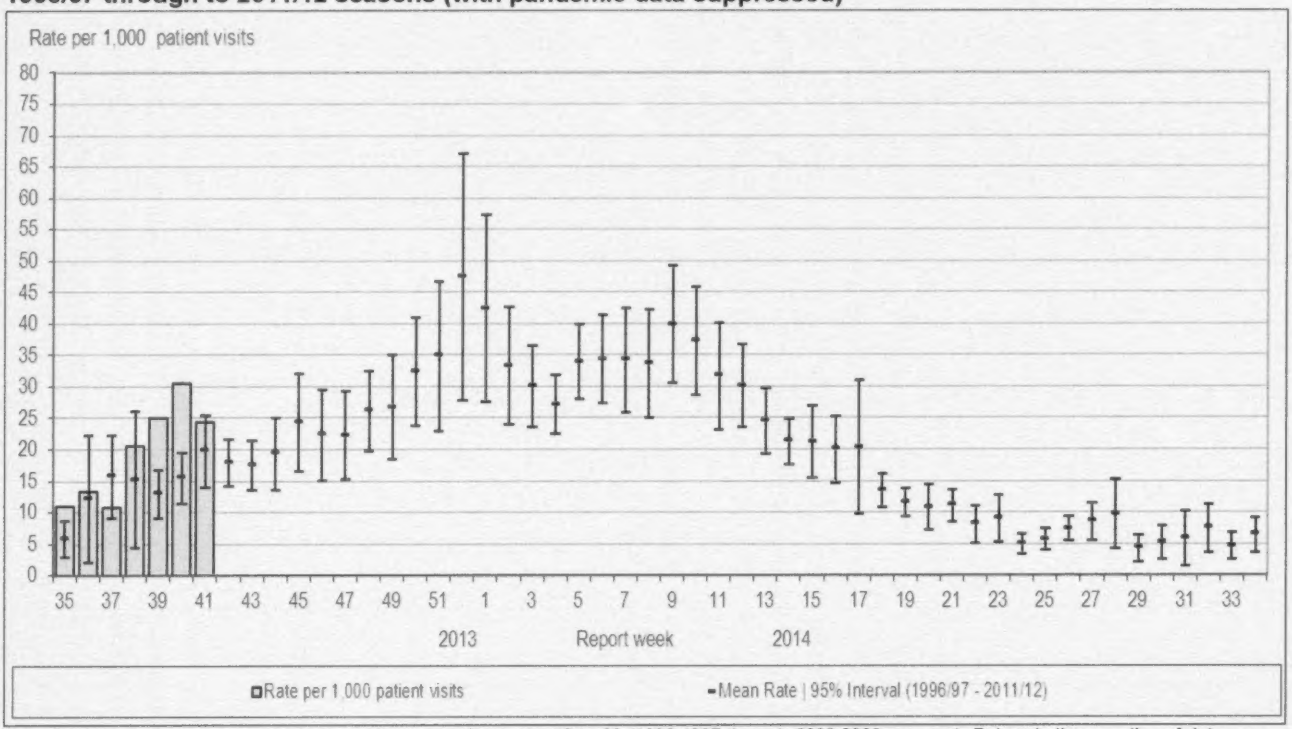
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	0	0	0	0	0	0
A (H1N1)	0	0	0	0	0	0
B	0	0	0	0	NA*	NA*
TOTAL	0	0	0	0	0	0

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate decreased from 30.4/1,000 visits in week 40 to 24.3/1,000 in week 41, while maintaining a general upward trend in recent weeks (Figure 7).

Figure 7. Influenza-like illness (ILI) consultation rates by report week, Canada, 2013-14, compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)
No laboratory-confirmed influenza-associated paediatric (≤16 years of age) hospitalizations have been reported in any of the 12 hospitals participating in the Immunization Monitoring Program Active (IMPACT) network in week 41.

Note: The number of hospitalizations reported through IMPACT represents a subset of all influenza-associated paediatric hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Adult Influenza Hospitalizations and Deaths (PCIRN)
Active surveillance of laboratory-confirmed influenza-associated adult (≥16 years of age) hospitalizations reported by the PHAC/CIHR Influenza Research Network (PCIRN) Serious Outcomes Surveillance (SOS) network concluded for the 2012-13 influenza season on April 30th, 2013. The PCIRN-SOS network continues to report limited data on laboratory-confirmed cases of influenza identified through passive surveillance, and active surveillance will start again on November 15th, 2013. One new hospitalization and ICU admission was reported in week 41 in an adult 45-64 years of age with influenza A. No deaths were reported.

From week 35 to week 41, three influenza-associated adult hospitalizations have been reported by the PCIRN-SOS network, all with influenza A(unsubtyped). Two were 45-64 years of age, and one ≥65 years of age. ICU admission was required for one hospitalization and no deaths have been reported.

Note: The number of hospitalizations reported through PCIRN represents a subset of all influenza-associated adult hospitalizations in Canada. Delays in the reporting of data may cause data to change retrospectively.

Provincial/Territorial Influenza Hospitalizations and Deaths (Aggregate Surveillance System)
In week 41, one new laboratory-confirmed influenza-associated hospitalization was reported from participating provinces and territories (five of eight reporting in week 41).* The case was reported in an adult 45-64 years of age with influenza B. No ICU admissions or deaths were reported.

To date this season, four influenza-associated hospitalizations have been reported. Three cases were reported in adults 45-64 years of age, and one was reported in a child 0-4 years; 3 (75%) had influenza A [of which 1 was A(H3) and 2 was A(H1)], and 1 (25%) had influenza B. One ICU admission was reported in an adult among the four cases and no deaths were reported.

Note*: The number of new influenza-associated hospitalizations and deaths reported by the Aggregate Surveillance System each week may be overestimated, as it may include retrospective updates to data from Ontario for previous weeks. These data may also include cases reported by the IMPACT and PCIRN networks. Influenza-associated hospitalizations are not reported to PHAC by the following Provinces and Territory: BC, NU, QC, NS, and NB. Only hospitalizations that require intensive medical care are reported by Saskatchewan. ICU admissions are not reported in Ontario.

International Influenza Updates

Northern Hemisphere

Influenza activity in temperate regions of the northern hemisphere was at inter-seasonal levels in week 40. The US CDC has not published an influenza surveillance report since week 38. Other State and media reports indicate continued inter-seasonal influenza activity in the US.
World Health Organization influenza update (#196)
Centers for Disease Control and Prevention seasonal influenza report (wk38)
CIDRAP – "Spotty data suggest slow start to the US flu season" (16 Oct 2013)
EuroFlu weekly electronic bulletin (wk40)

Tropical Regions

Asia & Africa: Influenza activity remained low in most countries in tropical Asia, with both influenza A subtypes circulating. Hong Kong, China Special Administrative Region, reported increasing circulation of A(H3N2) in September, with accompanying increases in influenza-associated hospitalization rates. Countries in Southeast Asia reported decreasing circulation of influenza. In the Central African region, Côte d'Ivoire, Ghana and Kenya reported low-level co-circulation of influenza A(H3N2) and influenza B.

Carribean, Central America & tropical South America: Influenza activity in Caribbean and Central America was at low levels in week 40. In the majority of countries, co-circulation of influenza A(H3N2) and A(H1N1)pdm09 was reported this season. In tropical South America, influenza activity continued to decrease, indicating the end of the 2013 season in this region. Co-circulation of influenza A(H1N1)pdm09 and influenza B was reported this season.

World Health Organization influenza update (#196)
PAHO Influenza Situation Report (wk40)

Southern Hemisphere

The influenza season has come to an end in temperate countries of South America and South Africa. Activity in Oceania seems to have passed its peak.

South America – Southern Cone: Influenza and Acute Respiratory Infection activity were within the expected levels for this time of year in most countries. In both Argentina and Chile, influenza and respiratory virus detections continued to decline. In Paraguay, ILI activity was higher than expected for this time of year, but with decreased influenza and respiratory virus circulation.

South Africa: Circulation of A(H1N1)pdm09 was reported from April to July 2013, with a peak in laboratory detections in week 23. Influenza circulation in weeks 31-39 has shifted to a predominance of A(H3N2) and influenza B, but continues to decline.
South Africa Influenza surveillance report (wk34)

Australia & New Zealand: The start of the 2013 influenza season was delayed in both Australia and New Zealand, and activity has been low compared to previous seasons. Both countries reported co-circulation of influenza A(H1N1)pdm09, A(H3N2) and influenza B.
In New Zealand, consultation rates for ILI peaked in week 37, but remained below the baseline level of activity. Consultation rates declined over the past 4 weeks. Laboratory detections of influenza followed the same trend, decreasing in weeks 38-41. Among the 2,048 influenza viruses identified between weeks 1 and 41, 41.7% were influenza B. Among the 770 subtyped influenza A viruses, 73.1% were A(H3N2).
In Australia, the influenza season peaked at the end of August with activity relatively low compared to the previous two seasons. The ILI consultation rate was stable in the week ending 29 September, with the peak rate lower than in previous seasons. The peak levels of reports related to ILI from the online Flutracking and National Health Call Centre Network were similar to or lower than was observed during previous seasons. The number of laboratory-confirmed influenza notifications continued to decrease from a peak at the end of August. Among the 21,319 influenza viruses identified between 1 January and 27 September 2013, 62% were influenza A. To date approximately 15% of all influenza detections have been A(H1N1)pdm09 in 2013 compared to <1% during the 2012 season. Influenza B is predominant in persons <15 years of age, while influenza A is prevalent in children <5 years of age and adults 30-34 years of age. Consistent with previous seasons, there have been few notifications of A(H1N1)pdm09 in persons >65 years of age.
New Zealand Public Health Surveillance (wk41)
Australia Influenza Report (#08, wk38-39)

World Health Organization influenza update
PAHO Influenza Situation Report
WHO FluNet

Emerging Respiratory Pathogens

Human Avian Influenza

Influenza A(H7N9): One new case of human infection with avian influenza A(H7N9) was reported by the World Health Organization (WHO) on 16 October 2013. The patient is a 35 year old male from Zhejiang Province, China, who was admitted to hospital on 8 October 2013 and is currently in critical condition. Information on exposure history is unknown at this time. To date, WHO has been informed of 136 laboratory-confirmed human cases with avian influenza A(H7N9), including 45 deaths.
PHAC – Avian influenza A(H7N9)
WHO – Avian Influenza A(H7N9)

Human Swine Influenza

Influenza A(H3N2)v: No new cases of human infection with variant influenza A(H3N2)v were reported in week 41. To date in 2013, a total of 20 A(H3N2)v cases have been reported, and one person has been hospitalized.
Centers for Disease Control and Prevention Influenza A(H3N2) Variant Virus

Middle East Respiratory Syndrome Coronavirus (MERS-CoV)

Since 11 October 2013, WHO has reported three additional cases of MERS-CoV infection, two in Saudi Arabia and one in Qatar. The patients, all men, are 55 to 78 years of age. The patients in Saudi Arabia became ill at the end of September 2013 and died at the beginning of October 2013. Both patients were reported to have had no contact with a confirmed case of MERS-CoV. The patient in Qatar became ill at the beginning of October and was hospitalized in stable condition. He has no recent history of travel, but owns a farm and has significant contact with animals, including camels, sheep and hens. As of 18 October 2013, 139 laboratory-confirmed cases of human infection with MERS-CoV have been reported, including 60 deaths. Most patients are male (62%, 83/133) and range in age from 2 to 94 years (median 58 years, n=134).
PHAC – Middle East respiratory syndrome coronavirus (MERS-CoV)
WHO – Coronavirus infections

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2013-2014 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/influenza outbreaks for the 2013-2014 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.
Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.
Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.
Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2013-2014 season

Influenza Regional Activity levels are defined as:
1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported
2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†
3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region†**
4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region†**
Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.
* More than just sporadic as determined by the provincial/territorial epidemiologist.
† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.
This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html.

Ce rapport est disponible dans les deux langues officielles.